

Appl. No. 10/827,118
Amdt. dated October 14, 2005
Reply to Office action of July 14, 2005

Amendments to the Claims:

Please amend the claims as indicated.

1. (Currently Amended) A method of forming a pattern on a plate employing a mold and actinic radiation, said method comprising:

placing said plate, having a coupling layer positioned thereon, in superimposition with said mold;

positioning formable material between said plate and said mold, said formable material polymerizable in response to said actinic radiation;

contacting said formable material with said plate to form
~~forming~~ said pattern in said formable material to have a shape complementary to said mold, ~~defining patterned material;~~ and

adhering said patterned formable material to said coupling layer of said plate by passing said actinic radiation through said coupling layer to impinge upon said formable material.

2. (Original) The method as recited in claim 1 wherein positioning said formable material further includes depositing said formable material onto said mold.

3. (Original) The method as recited in claim 1 wherein positioning said formable material further includes depositing said formable material on said mold as a plurality of spaced-apart droplets.

4. CANCELLED

5. (Currently Amended) The method as recited in claim 1 wherein ~~positioning said formable material further includes depositing said formable material onto said mold, with forming~~

Appl. No. 10/827,118
Amdt. dated October 14, 2005
Reply to Office action of July 14, 2005

~~further including contacting said formable material with said plate and impinging radiation upon~~ adhering said patterned formable material to solidify further includes solidifying said patterned formable material in response to said actinic radiation, defining patterned material.

6. (Currently Amended) The method as recited in claim 1 ~~further including depositing a coupling agent on a surface of said plate, with~~ wherein adhering said patterned formable material to said plate further including includes forming a chemical bond between said patterned formable material and said coupling ~~{agent}}~~ layer.

7. (Currently Amended) The method as recited in claim 1 further including forming said plate to be substantially transparent to said actinic radiation.

8. (Currently Amended) The method as recited in claim 1 wherein positioning further includes providing said formable material formed from a material selected from a group of materials consisting essentially of sol-gel, hybrid sol-gel, polycarbonate, polymethylmethacrylate, and epoxy.

9. (Original) The method as recited in claim 1 further including providing said mold with features having a height greater than 10 μ m.

10. (Original) The method as recited in claim 1 further including providing said mold with features having a height in a range of 10 μ m to 100 μ m.

Appl. No. 10/827,118
Amdt. dated October 14, 2005
Reply to Office action of July 14, 2005

11. (Currently Amended) The method as recited in claim 1 further ~~including forming~~ includes providing said mold formed from a material selected from a group of materials consisting essentially of silicon, gallium arsenide, quartz, fused-silica, sapphire, organic polymers, siloxane polymers, borosilicate glass, fluorocarbon polymers and a combination thereof.

12. (Currently Amended) The method as recited in claim 1 further ~~including forming~~ includes providing said plate formed from a material selected from a group of materials consisting essentially of quartz, fused silica, and soda lime glass.

13. (Original) The method as recited in claim 1 wherein positioning said formable material further includes depositing said formable material on said plate as a plurality of spaced-apart droplets.

14. (Currently Amended) A method of forming a pattern on a plate employing a mold and actinic radiation, said method comprising:

placing said plate, having a coupling layer positioned thereon, in superimposition with said mold;

positioning formable material between said plate and said mold, said formable material polymerizable in response to said actinic radiation;

contacting said formable material with said plate to form ~~forming~~ said pattern in said formable material to have a shape complementary to said mold ~~by exposing said formable material to actinic radiation defining cross-linked material;~~ and

~~condensing said cross-linked material by thermally treating said cross-linked material, defining patterned material.~~

Appl. No. 10/827,118
Amdt. dated October 14, 2005
Reply to Office action of July 14, 2005

solidifying said formable material, defining patterned material, while adhering said formable material to said coupling layer of said plate by passing said actinic radiation through said coupling layer and impinging said actinic radiation onto said formable material.

15. CANCELLED

16. CANCELLED

17. (Original) The method as recited in claim 14 wherein positioning further includes depositing said formable material as a plurality of droplets on said mold.

18. (Original) The method as recited in claim 14 further including providing said mold with features having height greater than 10 μ m.

19. (Original) The method as recited in claim 14 further including providing said mold with features having a height in a range of 10 μ m to 100 μ m.

20. (Currently Amended) The method as recited in claim 14 wherein positioning further includes providing said formable material formed from a material ~~[[is]]~~ selected from a group of materials consisting essentially of sol-gel, hybrid sol-gel, polycarbonate, polymethylmethacrylate, and epoxy.

21. (Currently Amended) The method as recited in claim 14 ~~wherein~~ further includes providing said mold formed from a material ~~[[is]]~~ selected from a group of materials consisting essentially of silicon, quartz, fused-silica, sapphire, organic

Appl. No. 10/827,118
Amdt. dated October 14, 2005
Reply to Office action of July 14, 2005

polymers, siloxane polymers, borosilicate glass, fluorocarbon polymers or a combination thereof.

22. (Original) The method as recited in claim 14 wherein positioning said formable material further includes depositing said formable material on said plate as a plurality of spaced-apart droplets.

23. (Currently Amended) A method of forming a pattern on a plate employing a mold and actinic radiation, said method comprising:

placing said plate, having a coupling layer positioned thereon, in superimposition with said mold, ~~with said plate having a coupling agent disposed on a surface thereof;~~

depositing formable material on said mold as a plurality of spaced-apart droplets;

contacting said formable material with said plate to form said pattern in said formable material to have a shape complementary to said mold, ~~defining patterned material;~~ and

impinging actinic radiation upon said ~~patterned~~ formable material, defining patterned material, by passing said actinic radiation through said coupling layer to couple said patterned material to said coupling ~~layer~~ layer of said plate.

24. (Currently Amended) The method as recited in claim 23 wherein impinging said actinic radiation further includes solidifying said ~~patterned~~ formable material.

25. (Currently Amended) The method as recited in claim 24 wherein impinging said actinic radiation further includes forming a chemical bond between said ~~patterned~~ formable material and said coupling ~~layer~~ layer.

Appl. No. 10/827,118
Amdt. dated October 14, 2005
Reply to Office action of July 14, 2005

26. (Original) The method as recited in claim 25 further including providing said mold with features having dimensions greater than 10 μ m.

27. (Original) The method as recited in claim 26 further including providing said mold with features having a height in a range of 10 μ m to 100 μ m.

28. (Currently Amended) The method as recited in claim 27 further including forming said plate to be substantially transparent to said actinic radiation.

29. (Currently Amended) The method as recited in claim 28 wherein depositing further includes providing said formable material formed from a material selected from a group of materials consisting essentially of sol-gel, hybrid sol-gel, polycarbonate, polymethylmethacrylate, and epoxy.

30. (Currently Amended) The method as recited in claim 29 further ~~including forming~~ includes providing said mold formed from a material selected from an additional group of materials consisting essentially of silicon, gallium arsenide, quartz, fused-silica, sapphire, organic polymers, siloxane polymers, borosilicate glass, fluorocarbon polymers and a combination thereof.

31. (Currently Amended) The method as recited in claim 30 further including ~~forming~~ providing said plate formed from a material selected from a further group of materials consisting essentially of quartz, fused silica, and soda lime glass.

Appl. No. 10/827,118
Amdt. dated October 14, 2005
Reply to Office action of July 14, 2005

32. (New) The method as recited in claim 1 further including forming said coupling layer from 3-(trimethoxysilyl)propyl acrylate.

33. (New) The method as recited in claim 1 wherein adhering said formable material further includes solidifying said formable material in response to said actinic radiation.

34. (New) The method as recited in claim 14 further including forming said coupling layer from 3-(trimethoxysilyl)propyl acrylate.

35. (New) The method as recited in claim 23 further including forming said coupling layer from 3-(trimethoxysilyl)propyl acrylate.

36. (New) The method as recited in claim 14 further including condensing said patterned material by thermally treating said patterned material.

////

////

////

////

////

////

////

////

////

////

////

////

////